

Machining Outlook Takes Flight Again in the Aerospace Market

PRIOR TO 2020, MANY OF US who supply manufacturing systems were riding the coattails of the aerospace industry's 14-year boom. Our company was engaged in increased jet engine and structural parts production, as our machine tools are well-suited to hard metal machining. The robust sector also spurred development of customized components designed just for certain aspects of fixed-wing and rotor aircraft machining processes.

Then, well—we all know what happened in early 2020.

The commercial sector of the industry fell into the pandemic pit. As international travel decreased, production for twin-aisle aircraft took the most significant hit as there was already an overabundance of capacity. Plus the shift toward single aisles was already underway. Each sector—single aisles, business jets, civil rotorcraft—were all down. Military was the exception. That segment stayed on track.

According to The Teal Group, the top five aircraft programs will recover and go beyond the former boom from now until 2030. Those top five are Airbus A320Neo, Boeing 737NG/MAX, Lockheed Martin F-35, Boeing 787 and Airbus A350XWB. Don't forget about the private outer space programs either, particularly involving satellite manufacturing.

From our perspective as a machine tool provider, we are experiencing a faster comeback than we expected across all product lines. We anticipate that by 2023 we will be as busy, if not busier, than we were at the peak of the boom. There are a few drivers for this. Our customers were pushing their existing equipment hard to keep up with demand. As orders pick up again, some are replacing the tired equipment with new. And, while automation was often a requirement before, it is even more so now. Helping manufacturers

produce more with less has been our perpetual goal—and it's downright urgent now.

Labor and Automation

The other driver is the skilled-labor shortage, which we are all getting weary of hearing about. It is creating a push for more automation—and it is in automation where we see nuanced fine tuning and growth, such as bringing in secondary operations into flexible manufacturing cells. This includes such operations as robotic deburring, cleaning and measuring and what might be considered pre-FMS machining functions such as raw material storage. Cutting tool handling, monitoring and management within an FMS are also becoming common to integrate.

Critical component manufacturers throughout aerospace have traditionally been steps ahead of other sectors in applying the latest methodologies. They have been among the first to take on newer developments, not just in machining automation but also plant-wide systems and software. More decisions are data-driven, whether it's how to quote jobs or how to tell when a cutting tool insert needs to be changed.

Further, with the emergence of blockchain in the supply chain, potentially all suppliers will need to be aligned in their processes in this decade. While many industry experts project a full comeback by the middle of this decade, it takes time to retool, recalibrate processes and update industry-specific certifications. The U.S. Department of Defense, for example, is demanding some level of Cybersecurity Maturity Model Certification (CMMC) for security compliance. And more stringent requirements are coming.

Suppliers need to conduct inquiries now about how to improve machining, processes and operations so they are ready for the flight out of the pandemic pit. ➡



MATTHEW GIFFORD
National Sales
Manager – Mitsui
Seiki USA Inc.